

Beam Background for loosened BWTRS cut

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Abstract

This study determines the results on the beam background when we loosen the BWTRS cut from requiring a hit in either BW1 or BW2 chambers to requiring a hit in both chambers. The 1-BM value slightly decreases because the DELCO rejection is higher because the setup cuts is loosened and we only have 2 events remaining. The 2-BM KK background is about 2.8 times larger and the Kpi background is about 2.7 times larger making the total beam background about 2.7 larger (0.020 compared to 0.053 events).

Acceptance of BWTRS is coming soon.

$Bkgrnd (\times 10^{-3})$	using BWTRS	using BWTRSand
1- BM	0.79 ± 0.79	0.73 ± 0.73
2- BM KK	15.95 ± 20.80	45.03 ± 55.49
2- BM Kpi	2.82 ± 2.82	7.54 ± 7.54
2- BM	18.77 ± 18.77	52.57 ± 52.57
$Total$	19.56 ± 19.56	53.3 ± 53.3

Table 1: **Total Background.** Scaled to the 3/3 sample. DELCO is delc+delco3. BWTRS is the cut used in E949-PNN1 which cuts events if there is a hit in either BW1 or BW2. BWTRSand is a loosen cut where we only cut an event if there is a hit in BW1 and BW2. The nominal time window is 4.5ns from trs .